

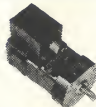







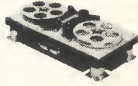


HIGH TEMPERATURE

						
COAXIAL CABLE	ANTENNA SYSTEMS	MOTORS	RELAYS	POWER SUPPLIES	HYDRAULICS	TIME DELAYS AND INTERVALOMETERS
						
COAXIAL SWITCHES	FREQUENCY AND VOLTAGE SENSORS	GYROS	MICROWAVE COMPONENTS	CONTROL COLUMNS	MAJOR FAILURE WARNING SYSTEM	FLIGHT DATA RECORDING SYSTEM



EIGHT DIVISIONS CONTRIBUTE TO THE OVER-ALL SYSTEMS CAPABILITY

ANCHOR DIVISION
Hurst, Texas

CONNECTICUT DIVISION
Thomaston, Connecticut

EEMCO DIVISION
Los Angeles, California

ELECTRONICS DIVISION-LOS ANGELES
(Corporate Offices) Los Angeles, California

ELECTRONICS DIVISION-PORTLAND
Portland, Oregon

POMONA DIVISION
Pomona, California

PORTLAND DIVISION
Portland, Oregon

SPACE CONDITIONING SYSTEMS DIVISION
Harrisonburg, Virginia

ELECTRONIC SPECIALTY...

Aerospace Systems and Programs

Electronic Specialty Co. is deeply involved in projects vital to the nation's global communications systems in outer space, and within our own atmosphere. A few of the company's contributions include: **a-** Complete radiating system for the Orbiting Solar Observatory. **b-** Command and telemetry hybrids, and filters for a major satellite program. **c-** Fundamental studies involving retro-directive satellite communications systems using phased array techniques. **d-** Precision motors for manned space vehicle. **e-** Telemetry check-out equipment for lunar exploration system. **f-** Tracking stations for space exploration operations. **g-** International tracking station for Telstar satellite. **h-** Tracking and telemetry capabilities for Commercial Communications Satellite (COMSAT) program. **i-** Complete data injection station for navigational satellite program. **j-** Electronic and electro-mechanical systems for major aircraft programs (TFX, etc.). **k-** Avionic and structural systems capabilities for supersonic transport program. **l-** Integrated helicopter antenna systems. **m-** Ballistic missile early warning (BMEWS) antennas. **n-** Satellite and missile ground instrumentation and tracking systems.



For further information write to
Director of Marketing
ELECTRONIC SPECIALTY CO.
4561 Colorado Blvd.
Los Angeles, California 90039

PRODUCT INDEX

ABSORPTION CHILLERS
ACTUATORS, ROTARY AND LINEAR
AIR CONDITIONING EQUIPMENT
AIR FILTRATION AND PURIFICATION
ANTENNA SUPPORT STRUCTURES
ANTENNA SYSTEMS, DATA LINK
ANTENNA SYSTEMS, LOG PERIODIC
ANTENNA SYSTEMS, SHIPBOARD
ANTENNAS, AIRBORNE
ANTENNAS, GROUND, 60', 85', 120'
ANTENNAS, MOBILE 28' TO 30'
ANTENNAS, PRECISION SURFACE
ANTENNAS, TOWER AND GROUND
MOUNTED 10' TO 120'
AUTOMATIC TRACKERS
BACKWARD WAVE OSCILLATORS
BALANCED MIXERS
BASEBOARD RADIATION
BOILERS
BURNERS, OIL, GAS, COMBINATION
CASTING, ALUMINUM, MAGNESIUM
CABLE, HIGH TEMPERATURE
CASTING, PERMANENT MOLD, SAND
CAVITIES
CHILLERS, DOUBLE-ABSORPTION
COAXIAL SWITCHES
COMMERCIAL HEATING AND COOLING
CONICAL SCANNERS
CONNECTORS, HIGH TEMPERATURE
CONVERTERS, AC TO DC
COPLANAR ARRAYS
COUNTERMEASURES SYSTEMS
DIPLEXERS
DIRECTION FINDING EQUIPMENT
DIRECTIONAL COUPLERS
DYNAMOTORS
ECM/ELINT PODS
ELBOWS
ELECTRIC POWER, ON SITE
ELECTRONICALLY STEERABLE
PHASED ARRAYS
ELINT SENSORS
FEED STRUCTURES, CASSEGRAINIAN
FEEDS, MONOPULSE
FEEDS, VARIABLE POLARIZATION
FILTERS
FLASHERS
FREQUENCY CHANGERS
FREQUENCY MEASURING EQUIPMENT
FURNACES
GAS FIRING SYSTEMS
GENERATORS, HOT WATER OR STEAM
GENERATORS, SPECIAL PURPOSE
GEODETIC SYSTEMS
GYROSCOPES
HEAT PUMPS
HEATERS, UNIT
HOT WATER HEATING
HUMIDITY REGULATION
HYBRID SLOTS
HYBRIDS
HYDRAULIC ACTUATORS
INSTRUMENTATION VANS
LINE REGULATORS, 400 CYCLE
MAGIC TEES
MATCHED LOADS
MICROWAVE TOWERS
MONOPULSE ARRAYS
MOTOR AND GEARBOX ASSEMBLY
MOTORS, AIRCRAFT AND MISSILE
MOTORS, RADAR SYSTEMS
MOTORS, SERVO
MOTORS, SPECIAL PURPOSE
NOISE SOURCES, MICROWAVE
OIL FIRING SYSTEMS
PEDESTALS
PHASE CONJUGATE ARRAYS
PHASE SHIFTERS
PNEUMATIC ACTUATORS
POWER AMPLIFIERS
POWER CONVERSION EQUIPMENT
POWER DIVIDERS
POWER SETS, UNINTERRUPTED
POWER SUPPLIES
POWER SYSTEMS, PRECISE
PUMP & HEATER SETS, OIL BURNER
PRECISION MACHINING
PRESSURE WINDOWS
PROFILE MILLING
PROGRAMMERS
QUICK-CLAMPS
RADAR SYSTEMS
RADIATION WEAPONS
RADIO TELESCOPES, 15' TO 40'
RECEIVERS, COMMAND GUIDANCE
RECORDERS, AIRBORNE
RELAYS, GENERAL PURPOSE
RESIDENTIAL HEATING AND COOLING
RINGING MACHINES
ROOM THERMOSTATS
ROTARY JOINTS
SATELLITE SYSTEMS
SCORING DEVICES
SENSORS, FREQUENCY AND VOLTAGE
SERVO POWER SYSTEMS
SLIDE TUNERS
SLOTTED LINE
SPINCASTINGS
STARTER GENERATORS
STATIC INVERTERS
STEAM HEATING SPECIALTIES
STOKERS
SWITCHYARD STRUCTURES
TELEMETRY TRACKING SYSTEMS
TERMINATIONS, MOVABLE TUNABLE
TIME DELAYS, STATIC
TOW TARGETS
TRACKERS, MISSILE, SATELLITE, TO 84'
TRANSITIONS
TRANSMISSION TOWERS
TRANSMITTERS
TRAVELING DETECTORS
TRAVELING WAVE TUBES
TUNERS
TWISTS, WAVEGUIDE
VAN ATTA ARRAYS
VENTILATORS, HEATING, COOLING
VSWR CALIBRATORS
WAVEGUIDE COMPONENTS
WAVEGUIDE, DOUBLE RIDGE
WAVEGUIDE, FLEXIBLE AND RIGID
WAVEGUIDE, HIGH PRESSURE

ELECTRONIC INDUSTRIES

ELECTRONIC APPLICATIONS

DESIGN GUIDE FOR ELECTRONIC

- DC MOTORS
- SOLENOIDS
- POWER TRANSMISSION
- METERS
- TAPE & DISC RECORDERS
- SUB-AUDIBLE TELEGRAPHY
- ULTRASONIC CLEANING •
- HIGH FIDELITY AUDIO
- FLOW DETECTION
- SONAR
- INDUCTION HEATING •
- A.M. BROADCASTING
- L-F MARKER BEACONS
- MOBILE
- LORAN
- CONELRAD
- MARKER BEACONS •
- F.M. BROADCASTING •
- POLICE •
- CITIZENS' RADIO •
- FACSIMILE •
- FIRE CONTROL
- GCA
- SHORAN •
- TACAN
- FM ALTIMETER
- ILS
- VOR, DME •
- TV REMOTE PICKUP
- WEATHER RADAR
- RADAR
- GOVERNMENT

GENERATORS OSCILLATORS AMPLIFIERS

PEAK OUTPUT
CW OR AV

INCOHERENT

COHERENT

MACHINES

MAGNETIC AMPLIFIERS

TRANSISTORS

TRIODES & TETRODES

EARTH'S RADIATION (290°K)

HUMAN BODY (310°K)

ARCS & SPARKS

BACKWARD WAVE OSCILLATOR

BACKWARD WAVE OSCILLATOR

KLYSTRON

AMPLITRON

MAGNETRON

T. W. T.

RECEIVERS AMPLIFIERS DETECTORS

INCOHERENT

COHERENT

TRANSISTORS

MAGNETIC AMPLIFIERS

DIODES

ELECTRON TUBES

THERMISTORS & THERMOCOUPLES, ETC.

PARAMETRIC AMPLIFIERS

MASE

ELECTRONIC- OPTICAL

WAVE LENGTH METERS

100M

10M

1M

100k

10k

1k

100

10

1

10c

1c

RADIO WAVES

FCC ALLOCATION

FREQUENCY (C.P.S.)

1

10

100

1k

10k

100k

1M

10M

100M

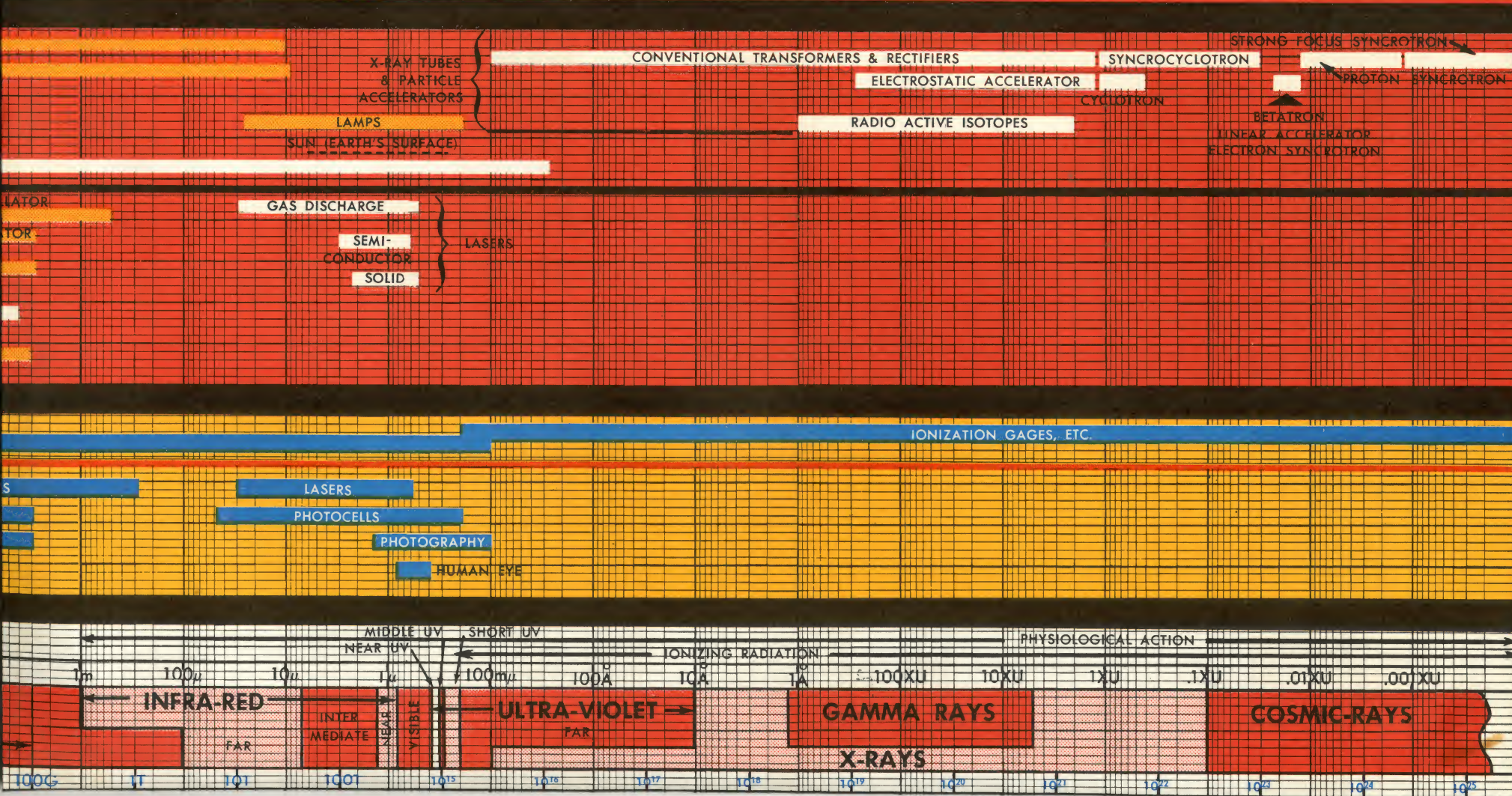
1G

10G

TRONIC-OPTICAL SYSTEMS

**ELECTRONIC
INDUSTRIES**

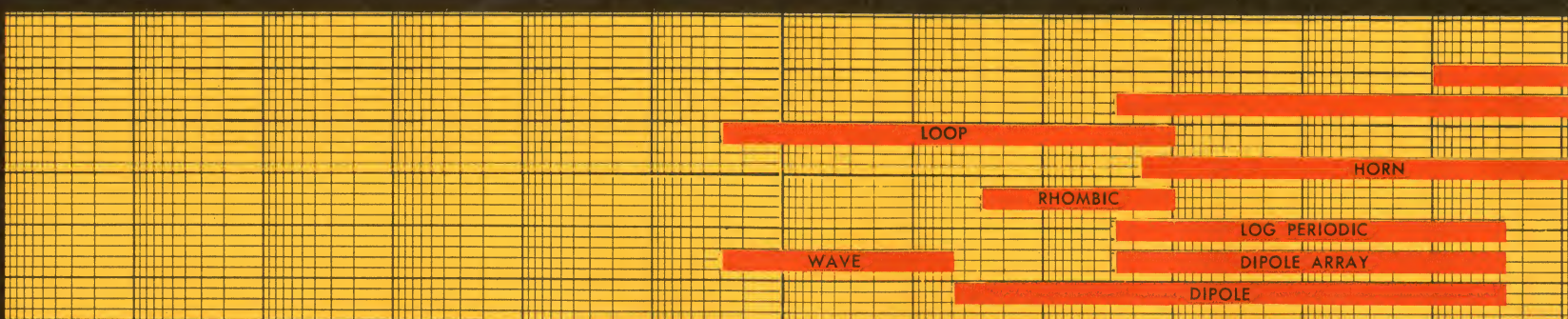
- THERAPY •
- EARTH STUDY PROBES
- HEATING, COOKING •
- MEDICAL STUDIES •
- IR PHOTOGRAPHY •
- NIGHT VIEWING (Snooperscope Type)
- IRRADIATION •
- STERILIZING, DEODORIZING
- FLUOROSCOPY, MINERAL DETECTION
- MEDICAL
- ATOMIC STRUCTURE STUDIES
- MEDICAL EXAMINATION
- FLAW DETECTION •
- ABSORPTION ANALYSIS
- LEVEL GAUGES •
- THICKNESS GAUGES
- RADIATION DETECTION
- THICKNESS MEASURING
- CHEMICAL PROCESSING
- MEDICAL TREATMENTS
- CANCER TREATMENT
- INVESTIGATIONS OF THE PROPERTIES OF MATTER



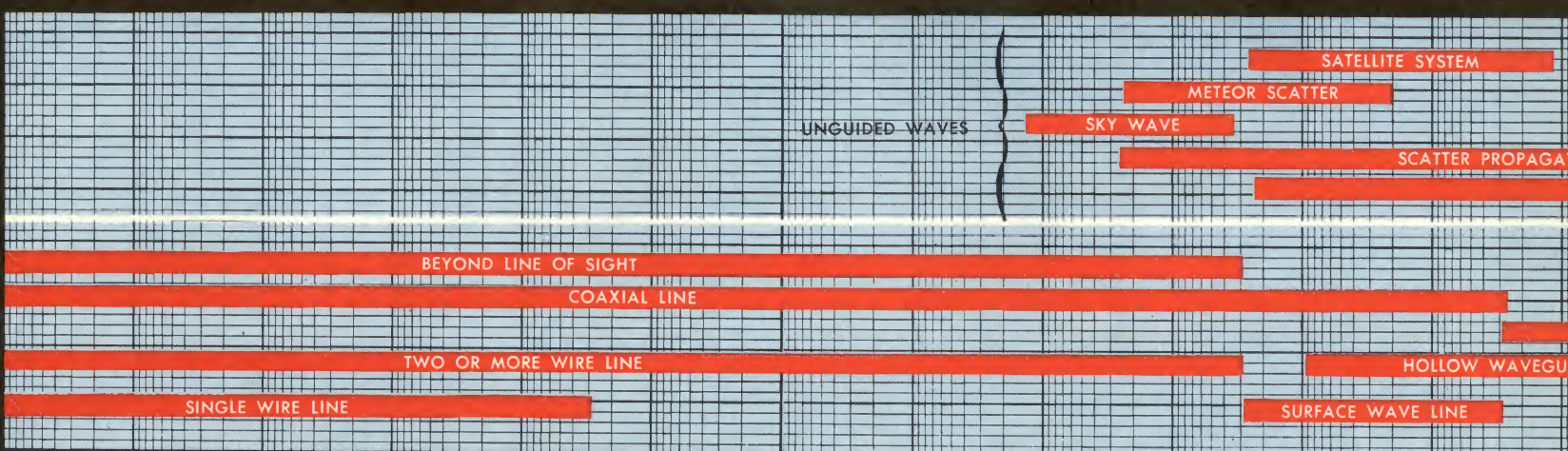
SPECTRUM

BAND NO.	1	2	3	4	5	6	7	8	9	10
	ELF	SLF	ULF	VLf	LF	MF	HF	VHF	UHF	SHF
COHERENCY OF SOURCES										
PHOTON ENERGY E.V.										

ANTENNA TYPES

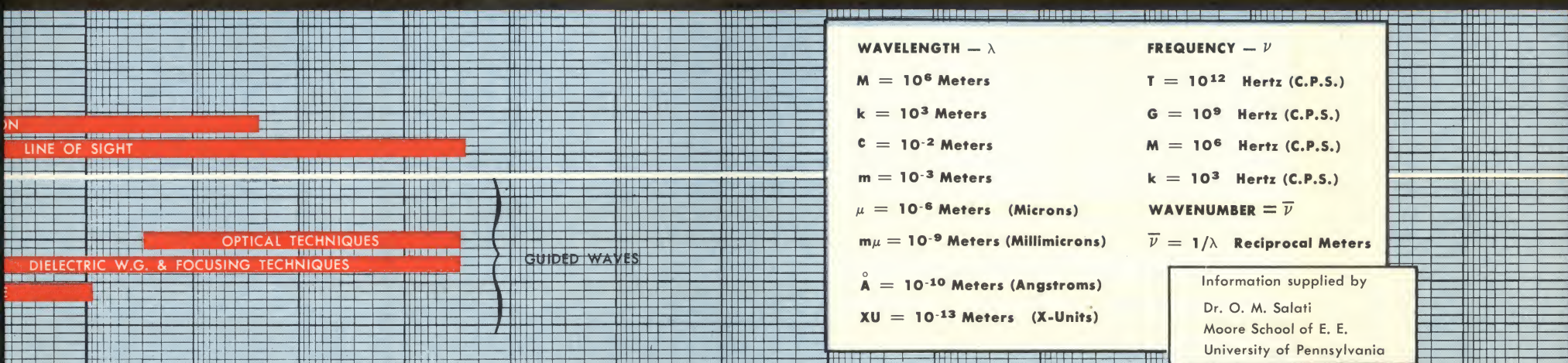
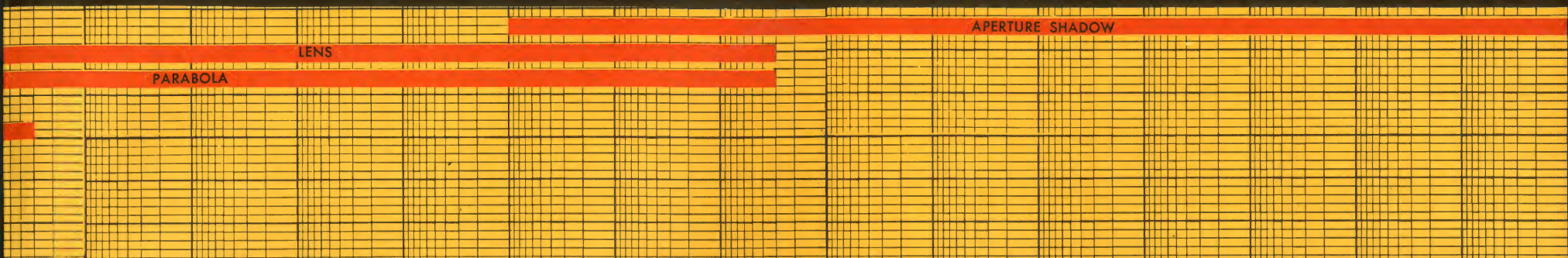
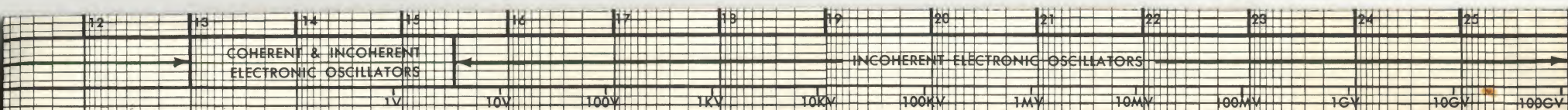


TRANSMISSION MEDIA



ELECTRONIC SPECIALTY CO.

4561 COLORADO BOULEVARD, LOS ANGELES 90039
 TELEPHONE 213-246-6767 TWX 213-240-2145



WAVELENGTH — λ

M = 10^6 Meters

k = 10^3 Meters

C = 10^{-2} Meters

m = 10^{-3} Meters

μ = 10^{-6} Meters (Microns)

m μ = 10^{-9} Meters (Millimicrons)

\AA = 10^{-10} Meters (Angstroms)

XU = 10^{-13} Meters (X-Units)

FREQUENCY — ν

T = 10^{12} Hertz (C.P.S.)

G = 10^9 Hertz (C.P.S.)

M = 10^6 Hertz (C.P.S.)

k = 10^3 Hertz (C.P.S.)

WAVENUMBER = $\bar{\nu}$

$\bar{\nu}$ = $1/\lambda$ Reciprocal Meters

Information supplied by
Dr. O. M. Salati
Moore School of E. E.
University of Pennsylvania

***LEADERS IN THE DESIGN, DEVELOPMENT, AND PRODUCTION OF**

COMMUNICATIONS SYSTEMS AND COMPONENTS

ELECTRONIC AND ELECTROMECHANICAL CONTROLS

POWER SYSTEMS AND COMPONENTS

RECONNAISSANCE AND COUNTERMEASURES SYSTEMS

SPACE CONDITIONING SYSTEMS

ADVANCED ELECTRONIC SYSTEMS

PRECISION CASTING AND MACHINING

***For your convenience a complete list of **ES** products is shown on the back**

ES

ELECTRONIC SPECIALTY...

A Single Source for Industry and Defense

Electronic Specialty is a diversified, multi-divisional organization serving industry and government over a broad range of vital areas with advanced systems, sub-systems, and state-of-the-art components. Electronic Specialty's vigorous, fresh approach to an advancing technology has placed it in a position of leadership in the following areas of endeavor:

Reconnaissance and Countermeasures

Communications Systems and Components	Electronic and Electromechanical Controls
Power Systems and Components	Space Conditioning Systems
Precision Casting and Machining	Power Transmission Towers
Advanced Electronic Systems	

SYSTEMS CAPABILITY

In all of the preceding areas ES contributions are based on a total systems design approach made possible by the integrated efforts of its eight divisions. The unique systems design approach is based upon the demonstrated internal ability to produce and integrate the necessary components, and design, develop, manufacture, install, and check out complex systems. This singular capacity provides defense and industry with the benefits of economy, time savings, and a decrease in sub-system interface problems.

COMPONENTS CAPABILITY

In addition to the total systems capability, Electronic Specialty designs and manufactures one of the most advanced lines of electronic components for industrial, defense, and consumer applications. Many of these components are available as off-the-shelf items from representatives located in major metropolitan distribution centers. Inquiries concerning special devices, components, and sub-systems should be directed to the Director of Marketing in Los Angeles.

1 Electronic reconnaissance and countermeasures systems produced by Electronic Specialty are now operational in many supersonic aircraft. Two of the most recent developments are a complete electronic intelligence system which features an inflight data processing capability, and an advanced photo interpretation aid. **2** ES has a unique capacity to provide major avionic systems for such advanced aerospace concepts as the supersonic transport, and to machine and treat the exotic metal structures that must withstand new extremes in temperatures and pressures on the aircraft.



ERRATA

On the line "ELECTRONIC-OPTICAL SPECTRUM", band designations
should be corrected to read as follows:

BAND NO.	DESIGNATION	BAND NO.	DESIGNATION
0	--	6	MF
1	ELF	7	HF
2	SLF	8	VHF
3	ULF	9	UHF
4	VLf	10	SHF
5	LF	11	EHF